What is claimed is:

1. An apparatus for transporting a plurality of Time Division Multiplexing (TDM) bit streams over an asynchronous Ethernet network, comprising:

an ingress buffer adapted for storing TDM data before encapsulation into Ethernet frames;

an egress buffer adapted for storing Ethernet frames after segmentation into TDM streams;

encapsulation means operative to retrieve TDM data from said ingress buffer, assemble Ethernet frames therefrom and forward said assembled Ethernet frames to said Ethernet interface;

segmentation means operative to receive Ethernet frames from an Ethernet interface, extract TDM data therefrom and store said TDM data in said egress buffer; and

a processor adapted to:

receive TDM data from a plurality of TDM ports;

store said TDM data in said ingress buffer in accordance with output Ethernet frames;

retrieving TDM data from said egress buffer and generating a plurality of synchronous TDM data streams therefrom.

2. The apparatus according to claim 1, wherein said TDM stream comprises a stream selected from the group comprising E1, T1, E3, T3, OC-3, STM-1, OC-12, STM-4 streams.

3. The apparatus according to claim 1, wherein said encapsulation means is operative to encapsulate data from a plurality of TDM ports into a single Ethernet frame.

4. The apparatus according to claim 1, wherein said encapsulation means is operative to encapsulate data from a plurality of TDM frames corresponding to a single TDM port into a single Ethernet frame.

5. The apparatus according to claim 1, wherein said segmentation means is operative to segment an Ethernet frame into a plurality of TDM streams, each TDM stream corresponding to a different TDM port.

6. The apparatus according to claim 1, wherein said segmentation means is operative to segment an Ethernet frame into a plurality of TDM frames corresponding to a single TDM port.

7. The apparatus according to claim 1, wherein said processor is adapted to store TDM data received from a plurality of TDM ports in accordance with specific port based parameters.

8. The apparatus according to claim 1, wherein said processor is adapted to store TDM data received from a plurality of TDM ports in accordance with specific time based parameters.

9. The apparatus according to claim 1, wherein said encapsulation means is operative to receive TDM data on a plurality of constant synchronous serial bit streams.

10. The apparatus according to claim 1, wherein said encapsulation means is operative to perform encryption on said TDM data before packaging said TDM data into Ethernet frames.

11. The apparatus according to claim 1, wherein said encapsulation means is operative to perform compression on said TDM data before packaging said TDM data into Ethernet frames.

12. The apparatus according to claim 1, wherein said encapsulation means is operative to calculate a Cyclic Redundancy Check (CRC) code before packaging said TDM data into Ethernet frames.

13. The apparatus according to claim 1, wherein said encapsulation means comprises:

means for packaging TDM stream data into Real Time Protocol (RTP) packets, then into User Datagram Protocol (UDP) packets, then into Internet Protocol (IP) packets and finally into Ethernet frames; and

means for generating appropriate header information for said RTP packet, UDP packet, IP packet and Ethernet frame or a subset thereof.

14. The apparatus according to claim 1, wherein said encapsulation means is operative to forward Ethernet frames toward an Ethernet Media Access Control (MAC) device.

15. The apparatus according to claim 1, wherein said segmentation means comprises:

means for extracting TDM stream data from the contents of a Real Time Protocol (RTP) packet, User Datagram Protocol (UDP) packet and Internet Protocol (IP) packet extracted from said Ethernet frame; and

means for storing said TDM data in said egress buffer in accordance with the contents of RTP header information.

16. The apparatus according to claim 1, wherein said processor is adapted to perform rate adaptation between a plurality of TDM ports and an egress buffer interface.

17. The apparatus according to claim 1, wherein said processor is adapted to forward TDM frames to appropriate TDM ports as a constant synchronous serial or parallel bit stream.

18. An apparatus for transporting TDM bit streams over an Ethernet network, comprising:

a plurality of TDM port interfaces coupled to a plurality of TDM ports, each TDM port adapted to receive a constant synchronous serial or parallel TDM bit stream;

at least one Ethernet interface adapted to be coupled to an Ethernet network;

encapsulation means operative to retrieve TDM data from an ingress buffer, assemble Ethernet frames therefrom and forward said assembled Ethernet frames to said Ethernet interface;

segmentation means operative to receive Ethernet frames from said Ethernet interface, extract TDM data therefrom and store said TDM data in an egress buffer; and

a processor adapted to:

receive TDM data from a plurality of TDM ports;

store said TDM data in said ingress buffer in accordance with output Ethernet frames;

retrieving TDM data from said egress buffer and generating a plurality of TDM data streams therefrom.

19. The apparatus according to claim 18, wherein said Ethernet interface comprises a 10Base-T Ethernet interface.

20. The apparatus according to claim 18, wherein said Ethernet interface comprises a 100Base-T Fast Ethernet interface.

21. The apparatus according to claim 18, wherein said Ethernet interface comprises a 1000Base-T Gigabit Ethernet interface.

22. The apparatus according to claim 18, wherein said Ethernet interface comprises a 10 Gigabit Ethernet interface.

23. The apparatus according to claim 18, wherein said plurality of TDM port interfaces comprises at least one port interface selected from the group comprising E1, T1, E3, T3, OC-3, STM-1, OC-12 and STM-4 port interfaces.

24. The apparatus according to claim 18, wherein said encapsulation means is operative to encapsulate data from a plurality of TDM ports into a single Ethernet frame.

25. The apparatus according to claim 18, wherein said encapsulation means is operative to encapsulate data from a plurality of TDM frames corresponding to a single TDM port into a single Ethernet frame.

26. The apparatus according to claim 18, wherein said segmentation means is operative to segment an Ethernet frame into a plurality of TDM streams, each TDM stream corresponding to a different TDM port.

27. The apparatus according to claim 18, wherein said segmentation means is operative to segment an Ethernet frame into a plurality of TDM frames corresponding to a single TDM port.

28. The apparatus according to claim 18, wherein said processor is adapted to store TDM data received from a plurality of TDM ports in accordance with specific port based parameters.

29. The apparatus according to claim 18, wherein said processor is adapted to store TDM data received from a plurality of TDM ports in accordance with specific time based parameters.

30. The apparatus according to claim 18, wherein said encapsulation means comprises:

means for packaging TDM stream data into Real Time Protocol (RTP) packets, then into User Datagram Protocol (UDP) packets, then into Internet Protocol (IP) packets and finally into Ethernet frames; and

means for generating appropriate header information for said RTP packet, UDP packet, IP packet and Ethernet frame or any subset thereof.

31. The apparatus according to claim 18, wherein said segmentation means comprises:

means for extracting TDM stream data from the contents of a Real Time Protocol (RTP) packet, User Datagram Protocol (UDP) packet and Internet Protocol (IP) packet extracted from said Ethernet frame; and

means for storing said TDM data in said egress buffer in accordance with the contents of RTP header information or any subset thereof.

32. A method of transporting a plurality of Time Division Multiplexing (TDM) bit streams over an Ethernet network, said method comprising the steps of:

receiving TDM stream data from a plurality of TDM ports;

assembling Ethernet frames from said received TDM stream data;

forwarding said assembled Ethernet frames to said Ethernet network via an Ethernet interface connected thereto;

receiving Ethernet frames from said Ethernet network;

extracting TDM data from said received Ethernet frames and generating TDM streams therefrom; and

forwarding said TDM streams to an appropriate TDM port in a synchronous manner.

33. The method according to claim 32, wherein said step of receiving TDM stream data comprises the step of storing said TDM data in an ingress buffer in accordance with an output Ethernet frame to be generated.

34. The method according to claim 32, wherein said step of extracting comprises the step of storing segmented TDM data in an egress buffer.

35. The method according to claim 32, wherein said Ethernet interface comprises a 10Base-T Ethernet interface.

36. The method according to claim 32, wherein said Ethernet interface comprises a 100Base-T Fast Ethernet interface.

37. The method according to claim 32, wherein said Ethernet interface comprises a 1000Base-T Gigabit Ethernet interface.

38. The method according to claim 32, wherein said Ethernet interface comprises a 10 Gigabit Ethernet interface.

39. The method according to claim 32, wherein said plurality of TDM port interfaces comprises at least one port interface selected from the group comprising E1, T1, E3, T3, OC-3, STM-1, OC-12 and STM-4 port interfaces.

40. The method according to claim 32, wherein said step of assembling comprises the step of encapsulating data from a plurality of TDM ports into a single Ethernet frame.

41. The method according to claim 32, wherein said step of assembling comprises the step of encapsulating data from a plurality of TDM frames corresponding to a single TDM port into a single Ethernet frame.

42. The method according to claim 32, wherein said step of extracting comprises the step of segmenting an Ethernet frame into a plurality of TDM streams, each TDM stream corresponding to a different TDM port.

43. The method according to claim 32, wherein said step of extracting comprises the step of segmenting an Ethernet frame into a plurality of TDM frames corresponding to a single TDM port.

44. The method according to claim 32, further comprising the step of storing TDM data received from a plurality of TDM ports in accordance with specific port based parameters.

45. The method according to claim 32, further comprising the step of storing TDM data received from a plurality of TDM ports in accordance with specific time based parameters.

46. The method according to claim 32, wherein said step of assembling comprises the steps of:

packaging TDM stream data into Real Time Protocol (RTP) packets, then into User Datagram Protocol (UDP) packets, then into Internet Protocol (IP) packets and finally into Ethernet frames; and

generating appropriate header information for said RTP packet, UDP packet, IP packet and Ethernet frame or a subset thereof.

47. The method according to claim 32, wherein said step of extracting comprises the steps of:

extracting TDM stream data from the contents of a Real Time Protocol (RTP) packet, User Datagram Protocol (UDP) packet and Internet Protocol (IP) packet extracted from said Ethernet frame; and

storing said TDM data in said egress buffer in accordance with the contents of RTP header information.